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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,046	02/10/2006	Carl Christensen	PU030244	2960

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EXAMINER	
SPITTLE, MATTHEW D	

ART UNIT	PAPER NUMBER
2111	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/568,046	CHRISTENSEN ET AL.	
	Examiner	Art Unit	
	MATTHEW D. SPITTLE	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 March 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1 – 25 have been examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 – 11, 13 – 17, and 19 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornet et al. (U.S. 7,254,112) in view of Hsieh et al. (U.S. 5,625,780) and what is old and well known in this art as evidenced by Notarianni et al. (U.S. 5,301,346) and Bennett (U.S. 6,539,534).

Regarding claims 1 and 14, Cornet et al. teach a router comprising:

A plurality of input cards (Fig. 1, 150, left side) for inputting data into the broadcast router;

A plurality of output cards (Fig. 1, 150, right side) for outputting the data from the broadcast router;

At least one device (Fig. 1, 106);

Cornet et al. fail to teach a programmable device, a configuration control card, and the remaining limitations.

Hsieh et al. teach a programmable device (Fig. 2, 16);

A configuration control (Fig. 2, 30) for storing configuration information for configuring the at least one programmable device to perform a first set of functions (col. 5, line 67 – col. 6, line 12);

Wherein the configuration control is configured for removal and replacement by at least one other configuration control that stores other configuration information for configuring the at least one programmable device to perform a second set of functions having a difference from the first set of functions so as to change a functionality of the broadcast router (col. 6, lines 18 – 21).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the configuration control and programmable device as taught by Hsieh et al. into the system of Cornet et al. for the purpose of flexibly interconnecting cards and providing uniform capacitive load, as well as reducing signal delay (Hsieh et al.: col. 2, lines 12 - 34). This would have been obvious in order to improve the performance of the system, as well as making it easily modifiable as the system changes.

Cornet et al. and Hsieh et al. fail to teach where the configuration control (ROM 30) is incorporated on a card. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device (ROM) on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the ROM of Hsieh et al. onto a printed circuit card. This would have been obvious since to do so is routine in this art.

Regarding claims 2, 15 and 20, Cornet et al. teach the additional limitation wherein the broadcast router employs switch points (col. 5, lines 24 – 29), the data received by the plurality of input cards (Fig. 1, LEFT 150) includes input streams (col. 4, lines 21 – 26), And the one or more functionalities comprise at least one of receiving alternate input streams (col. 3, lines 52 – 55).

Regarding claims 3, 16 and 21 Hsieh et al. teach the additional limitation wherein the configuration information comprises at least configuration data for FPGAs (where an FPGA may be interpreted as an FPID; col. 5, line 67 – col. 6, line 12).

Regarding claims 4 and 17, Hsieh et al. teach the additional limitation wherein the difference involves at least one of adding at least one new function and removing at least one existing function (col. 6, lines 4 – 10).

Regarding claims 5 and 22, Hsieh et al. fail to teach wherein the at least one programmable device is on at least one of the plurality of input cards and the plurality of output cards. However, the Examiner notes that rearrangement of parts is not a patentable distinction, because it would not modify the operation of the system. See In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 6, Hsieh et al. teach the additional limitation comprising:

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router; and

A matrix device for receiving the data from the plurality of input cards for subsequent routing within the broadcast router (Fig. 2, 24).

Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix device are incorporated on cards. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

Regarding claims 7 and 23, Hsieh et al. teach the additional limitation wherein at least one of the expansion card and the matrix card provides support protocols to change input/output assignments of the data (col. 6, lines 4 – 10).

Regarding claim 8, Hsieh et al. fail to teach wherein the expansion card and the matrix card are implemented on a same card. However, the Examiner notes that integration of prior art components is not a patentable distinction, because it would not modify the operation of the system. See In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965).

Regarding claim 9, Hsieh et al. fail to teach wherein the at least one programmable device is disposed on at least one of the expansion card and the matrix card. However, the Examiner notes that rearrangement of parts is not a patentable distinction, because it would not modify the operation of the system. See In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 10, Hsieh et al. teach the additional limitation comprising a control device for providing support protocols to change input/output assignments of the data (col. 5, line 67 – col. 6, line 4), but fail to teach the device disposed on a control card.

. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Bennett (Fig. 3, 305).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

Regarding claims 11 and 24, Hsieh et al. fail to teach wherein the at least one programmable device is disposed on at least the control card. However, the Examiner notes that rearrangement of parts is not a patentable distinction, because it would not modify the operation of the system. See In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

Regarding claim 13, Hsieh et al. teach the additional limitation wherein the configuration control card comprises a user-input device for receiving a user input for initiating a configuration of the at least one programmable device (col. 7, lines 27 – 51; col. 8, lines 3 – 25).

Regarding claim 19, Cornet et al. teach a router comprising:

A plurality of input cards (Fig. 1, 150, left side) for inputting data into the broadcast router;

A plurality of output cards (Fig. 1, 150, right side) for outputting the data from the broadcast router;

At least one device (Fig. 1, 106);

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router; and

A matrix device for receiving the data from the plurality of input cards for subsequent routing within the broadcast router (Fig. 2, 24).

Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix device are incorporated on cards. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

Cornet et al. fail to teach a programmable device, a configuration control card, and the remaining limitations.

Hsieh et al. teach a programmable device (Fig. 2, 16);

A configuration control (Fig. 2, 30) for storing configuration information for configuring the at least one programmable device to perform a first set of functions (col. 5, line 67 – col. 6, line 12);

Wherein the configuration control is configured for removal and replacement by at least one other configuration control that stores other configuration information for configuring the at least one programmable device to perform a second set of functions having a difference from the first set of functions so as to change a functionality of the broadcast router (col. 6, lines 18 – 21).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the configuration control and programmable device as taught by Hsieh et al. into the system of Cornet et al. for the purpose of flexibly interconnecting cards and providing uniform capacitive load, as well as reducing signal delay (Hsieh et al.: col. 2, lines 12 - 34). This would have been obvious in order to improve the performance of the system, as well as making it easily modifiable as the system changes.

Cornet et al. and Hsieh et al. fail to teach where the configuration control (ROM 30) is incorporated on a card. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device (ROM) on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the ROM of Hsieh et al. onto a printed circuit card. This would have been obvious since to do so is routine in this art

An expansion device (Fig. 2, 22) for receiving the data from the plurality of input cards and arranging the data for transfer within the broadcast router; and

A matrix device for receiving the data from the plurality of input cards for subsequent routing within the broadcast router (Fig. 2, 24).

Cornet et al. and Hsieh et al. fail to teach where the expansion device and matrix device are incorporated on cards. The Examiner takes Official Notice that it is old and well known in this art to incorporate a digital device on a printed circuit board. This is evidenced by Notarianni et al. (col. 21, lines 18 – 19).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the matrix and expansion devices of Hsieh et al. onto printed circuit cards. This would have been obvious since to do so is routine in this art.

* * *

Claims 12, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornet et al. (U.S. 7,254,112) in view of Hsieh et al. (U.S. 5,625,780), Watanabe et al. (U.S. 4,764,959), and what is old and well known in this art as evidenced by Notarianni et al. (U.S. 5,301,346) and Bennett (U.S. 6,539,534).

Regarding claims 12, 18 and 25, Cornet et al. and Hsieh et al. fail to teach wherein at least a portion of the configuration information and the other configuration information is encrypted.

Watanabe et al. teach encrypting configuration information on a ROM (as in Hsieh et al.) for the purpose of preventing the information from being copied by a third party (col. 1, lines 47 - 53; col. 3, lines 12 - 28).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by Applicant to incorporate the encryption means of Watanabe et al. into the ROM of Cornet et al. and Hsieh et al. for the purpose of preventing the information from being copied by a third party. This would have been obvious for copyright protection purposes.

Response to Arguments

Applicant's arguments filed 3/30/2009 have been fully considered but they are not persuasive.

Regarding Applicant's argument that Cornet et al. teaches away from a programmable device, the Examiner agrees in that Cornet et al. is not relied upon for the teaching of a programmable device, rather, Hsieh et al. is. Hsieh et al. teaches a similar routing device (Fig. 2, 16) which is programmable via a ROM (col. 6, lines 18 - 21). Thus, the Examiner finds it would be obvious to implement the programmable switch of Hsieh et al. in the system of Cornet et al. for the purpose of routing signals between two or more points. This would have been obvious since the use of a known technique to improve similar systems in the same way has been held to be obvious to one of ordinary skill. See MPEP 2141. Additionally, In response to applicant's argument that Cornet et al. must be taken in its entirety, the test for obviousness is not

whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Regarding Applicant's argument that the teachings of Hsieh et al. would render the invention of Cornet et al. unsatisfactory for its intended purpose, the Examiner disagrees. Hsieh et al. teach that his/her programmable switch system reduces the capacitive loading for optimum system performance (col. 2, lines 12 - 16), as well as improves the data transfer rate of the bus (col. 2, lines 18 - 21). Additionally, since the bus interconnections are easily changed, the bus layout can be optimized for performance as devices are added to or removed from the bus (col. 30, lines 41 - 48). Thus the Examiner finds that the modification of Hsieh et al. is consistent with the goals and purpose of Cornet et al.

Regarding Applicant's argument that none of the references disclose "...fading at the switch points...remote error monitoring, signal mixing, at least one of altering and enabling DSP functions, metering and modifying router size...", the Examiner notes that the claims only require one of the functionalities to occur, and in this case, Cornet et al. teach receiving alternative input streams (Cornet et al. col. 3, lines 52 - 55).

Regarding Applicant's argument that Hsieh et al. fails to teach the suggestion of a "user input device for receiving a user input for initiating a configuration of the at least one programmable device...", the Examiner notes that Hsieh et al. teach where the

changes in signal routing are effected by instructions from computers (col. 7, lines 55 – 58).

Therefore, the Examiner cannot allow the claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. SPITTLE whose telephone number is (571)272-2467. The examiner can normally be reached on Monday - Friday, 9 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. D. S./
Examiner, Art Unit 2111

/MARK RINEHART/
Supervisory Patent Examiner, Art Unit 2111